

DEPARTMENT OF TRANSPORTATION

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April 15, 2004

05-SB-101-44.8/57.6
05-0G8704
ACNH-Q101(032)E

Addendum No. 1

Dear Contractor:

This addendum is being issued to the contract for construction on State highway in SANTA BARBARA COUNTY NEAR GOLETA FROM 1.8 KM NORTH OF HOLLISTER AVENUE OVERCROSSING TO 1.1 KM SOUTH OF REFUGIO ROAD UNDERCROSSING.

Submit bids for this work with the understanding and full consideration of this addendum. The revisions declared in this addendum are an essential part of the contract.

Bids for this work will be opened on April 28, 2004.

This addendum is being issued to revise the Project Plans, the Notice to Contractors and Special Provisions, the Proposal and Contract, and the Federal Minimum Wages with Modification Number 3 dated 4-2-04.

Project Plan Sheets 2, 3, 4 and 6 are revised. Half-sized copies of the revised sheets are attached for substitution for the like-numbered sheets.

In the Special Provisions, Section 5-1.12, "COMPENSATION ADJUSTMENTS FOR PRICE INDEX FLUCTUATIONS," in the table of the first paragraph, "ASPHALT CONCRETE (TYPE B)" is changed to "ASPHALT CONCRETE (TYPE A)."

In the Special Provisions, Section 5-1.16, "EXISTING HIGHWAY FACILITIES," subsection "REMOVE PAVEMENT MARKER," in the second paragraph, "asphalt concrete (Type B)" is changed to "asphalt concrete (Type A)."

In the Special Provisions, Section 5-1.19, "ASPHALT CONCRETE," in the first paragraph, "Type B" is changed to "Type A."

In the Special Provisions, Section 5-1.19, "ASPHALT CONCRETE," the third paragraph is deleted.

In the Special Provisions, Section 5-1.19, "ASPHALT CONCRETE," the following paragraph is added after the fifth paragraph:

"The aggregate for Type A asphalt concrete shall be lime treated in conformance with the provisions in "Lime Treated Aggregates" of these special provisions."

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In the Special Provisions, Section 5-1.19, "ASPHALT CONCRETE," in the tenth paragraph, "Type B" is changed to "Type A."

In the Special Provisions, Section 5-1.21A, "LIME TREATED AGGREGATES," is added as attached.

In the Proposal and Contract, the Engineer's Estimate Item 16 is revised as attached.

To Proposal and Contract book holders:

Replace page 3 of the Engineer's Estimate in the Proposal with the attached revised page 3 of the Engineer's Estimate. The revised Engineer's Estimate is to be used in the bid.

Indicate receipt of this addendum by filling in the number of this addendum in the space provided on the signature page of the proposal.

Submit bids in the Proposal and Contract book you now possess. Holders who have already mailed their book will be contacted to arrange for the return of their book.

Inform subcontractors and suppliers as necessary.

This office is sending this addendum by confirmed facsimile to all book holders to ensure that each receives it. A copy of this addendum and the modified wage rates are available for the contractor's use on the Internet Site:

http://www.dot.ca.gov/hq/esc/oe/weekly_ads/addendum_page.html

If you are not a Proposal and Contract book holder, but request a book to bid on this project, you must comply with the requirements of this letter before submitting your bid.

Sincerely,

ORIGINAL SIGNED BY

REBECCA D. HARNAGEL, Chief
Office of Plans, Specifications & Estimates
Office Engineer

Attachments

10-1.21A LIME TREATED AGGREGATES

This work shall consist of furnishing and treating aggregates with lime in conformance with these special provisions.

Prior to being incorporated into Type A asphalt concrete, and open graded asphalt concrete, aggregate shall be treated with a slurry of lime and water in conformance with these special provisions.

MATERIALS

Lime shall conform to the provisions in Section 24-1.02, "Materials," of the Standard Specifications and shall be a high-calcium hydrated lime. Water for mixing with aggregate and lime shall be free from oil and other impurities and shall contain not more than 650 parts per million of chlorides as Cl, and not more than 1300 parts per million of sulfates as SO₄.

Lime shall be added to the aggregate as slurry. The slurry of dry lime and water shall be prepared at a ratio of one part lime to 3 parts water.

Aggregate for Type A asphalt concrete shall conform to the aggregate quality requirements specified in Section 11, "Asphalt Concrete," and these special provisions prior to the aggregate being treated with lime.

Combined aggregate gradation for Type A asphalt concrete will be determined after the aggregate has been treated with lime. Sampling of the combined aggregates shall be in conformance with the sampling requirements of the proportioning process being used for asphalt concrete production in conformance with the provisions in Section 11, "Asphalt Concrete," and these special provisions.

The lime ratio for the combined aggregates shall be not less than 1.2 percent and not more than 1.5 percent. The lime ratio is the kilograms of dry hydrated lime per 100 kg of dry aggregate expressed as a percent of the dry aggregate. The lime ratio for the combined aggregates for open graded asphalt concrete may be reduced to between 1.0 and 1.5 percent. The exact proportion shall be determined by the Contractor and approved by the Engineer. The lime ratio of the combined aggregate shall not deviate from the approved combined aggregate lime ratio by more than 0.2-percent when the individual sizes of aggregate are combined in the proportions designated in the approved asphalt concrete mix design. The water content of the slurry or the untreated aggregate shall have no bearing on the lime ratio.

Aggregate sizes shall be lime treated and cured separately. Lime shall be added to the separate sizes of aggregate in the following proportions:

	Aggregate Sizes	Lime Ratio
Coarse	Retained on 4.75-mm sieve	0.5 to 1.0
Fine	Passing the 4.75-mm sieve	1.5 to 2.0

The exact proportions of lime and fine or coarse aggregates for Type A asphalt concrete shall be determined by the Contractor and reviewed by the Engineer as part of the proposed mix design submitted in conformance with the provisions in Section 11, "Asphalt Concrete," and these special provisions.

The lime ratio for individual aggregate sizes shall not vary by more than 0.2-percent above or below the agreed lime ratio.

At the time of mixing the slurry with the aggregate, the moisture content of the aggregate shall be of sufficient quantity that complete coating of the aggregate with slurry is assured. Aggregate shall have been dried or drained such that no visible separation of water from the aggregate will take place.

Lime treated aggregate shall be free of lime balls and clods.

Once aggregate has been treated with lime, the aggregate shall not be treated with lime again.

PROPORTIONING

Weighing and measuring devices used for the proportioning of ingredients, except continuous weigh belts, shall have been Type-approved by the Division of Measurement Standards, Department of Food and Agriculture, State of California. Weighing and measuring devices used in the proportioning of slurry shall be tested in conformance with California Test 109 and these special provisions.

Scales used to calibrate proportioning devices used in the production of lime slurry or lime treated aggregates shall conform to the provisions in Section 9-1.01, "Measurement of Quantities" of the Standard Specifications and shall be error tested in conformance with California Test 109 within 24 hours of calibrating the proportioning devices.

Slurry of dry lime and water shall be proportioned by mass or by volume as specified in these Special Provisions. The proportioning of lime and water shall be of either a continuous or a batch type operation.

Proportioning for Lime Slurry by Continuous Mixing

When a continuous proportioning operation for the production of slurry is used the proportioning device shall determine the exact ratio of water to lime at all production rates. Rate-of-flow indicators and totalizers for like materials shall be accurate within 0.5-percent when compared directly. The following methods shall be used:

- A. Dry lime shall be weighed using a belt scale. Belt scale accuracy shall be such that, when operating between 30 percent and 100 percent of production capacity, the average difference between the indicated mass of material delivered and the actual mass delivered will not exceed 0.5-percent of the actual mass for 3 individual runs. For any of the 3 individual runs, the indicated mass of material delivered shall not vary from the actual mass delivered by more than one percent of the actual mass. Test run duration shall be for at least 0.5-tonne of dry lime. Tests shall be run using hydrated lime and shall be weighed on a platform scale located at the slurry proportioning plant. The platform scale shall have a maximum capacity not exceeding 2.5 tonnes with a maximum graduation size of 0.5-kg.
- B. Water to be used in the slurry shall be measured with a meter. Meter accuracy shall be such that, when operating between 50 percent and 100 percent of production capacity, the difference between the indicated mass of water delivered and the actual mass delivered shall not exceed one percent of the actual mass for 3 individual runs. Tests shall be weighed on a platform scale located at the slurry proportioning plant. The platform scale shall have a maximum capacity not exceeding 2.5 tonnes with a maximum graduation size of 0.5-kg. Test run duration shall be for at least 1150 L.
- C. Meters and scales used for the continuous proportioning of dry lime and water shall be equipped with rate-of-flow indicators to show the rates of delivery of dry lime and water and resettable totalizers so that the total amounts of dry lime and water introduced into slurry storage tank can be determined. Individual feeds for water and dry lime shall be equipped with no-flow devices which shall stop slurry production when either of the individual ingredients is not being delivered to the slurry storage tank.

Proportioning for Lime Slurry by Batch Mixing

When a batch type proportioning operation for the production of slurry is used the following methods shall be used:

- A. Dry lime shall be proportioned by mass. The weighing of the dry lime shall be performed at the slurry production site. The scale shall be appropriate for the amount of lime draft used. When the proportioning operation uses a dry lime draft of less than 10 tonnes, an automatic batch controller shall be utilized. Automatic batch controllers used for Type A asphalt concrete shall conform to the provisions in Section 11, "Asphalt Concrete," of these special provisions. Automatic batch controllers used for Type A asphalt concrete and open graded asphalt concrete, shall conform to the provisions in Section 39, "Asphalt Concrete," of the Standard Specifications.
- B. Water to be used in the slurry shall be measured with a meter. Meter accuracy shall be such that, when operating between 50 percent and 100 percent of production capacity, the difference between the indicated mass of water delivered and the actual mass delivered shall not exceed one percent of the actual mass for 3 individual runs. Tests shall be weighed on a platform scale located at the slurry proportioning plant. The platform scale shall have a maximum capacity not exceeding 2.5 tonnes with a maximum graduation size of 0.5-kg. Test run duration shall be for at least 1150 L.
- C. The water meter shall be equipped with a resettable totalizer. When an automatic controller is used to batch the dry lime it shall also control the proportioning of the water. When an automatic controller is used to proportion the water the indicated draft of the water shall be within one percent of its total draft mass.

Proportioning for Lime Treated Aggregate Production

Slurry and aggregate proportioning shall be of the continuous type.

Slurry shall be introduced into the mixer through a meter conforming to the provisions in Section 9-1.01, "Measurement of Quantities," of the Standard Specifications. The meter shall be the mass flow of Coriolis effect type. The system shall be capable of varying the rate of delivery of slurry proportionate with the delivery of aggregate.

The slurry meter shall function with such accuracy that, when operated at rates commensurate with aggregate delivery, the average difference between the indicated mass of material delivered and the actual mass delivered shall not exceed 0.5-percent of the actual mass for 3 runs of at least 3.75 tonnes. For any of 3 individual runs of at least 3.75 tonnes, the indicated mass of material delivered shall not vary from the actual mass delivered by more than one percent of the actual mass. Tests shall be weighed on a platform scale located at the slurry proportioning plant. The platform scale shall have a maximum capacity not exceeding 2.5 tonnes with a maximum graduation size of 0.5-kg. Test run duration shall be for at least 1150 L.

The aggregate shall be weighed using a belt scale. The belt scale shall be of such accuracy that, when the plant is operating between 30 percent and 100 percent of belt capacity, the average difference between the indicated mass of material delivered and the actual mass delivered shall not exceed one percent of the actual mass for 3 individual 3-minute runs. For any of the 3 individual 3-minute runs, the indicated mass of material delivered shall not vary from the actual mass delivered by more than 2 percent of the actual mass.

The actual mass of material delivered for aggregate weigh belt calibrations shall be determined by a vehicle scale conforming to the provisions in Section 9-1.01, "Measurement of Quantities," of the Standard Specifications. The vehicle scale shall be located at the plant site and shall be error checked within 24 hours of checking the plant's proportioning devices. The meters and belt scales used for proportioning aggregates and slurry shall be equipped to facilitate accuracy checks. These accuracy checks shall be performed before production begins and at other times determined by the Engineer.

The belt scale for the aggregate and the slurry meter shall be interlocked so that the rates of feed of the aggregates and slurry are adjusted automatically at all production rates and production rate changes to maintain the agreed lime ratio. The plant shall not be operated unless this automatic system is operating and in good working condition.

The slurry meter and the aggregate feeder shall be equipped with devices by which the rate of feed can be determined while the plant is in full operation. Meters and belt scales used for proportioning aggregates and slurry shall be equipped with rate-of-flow indicators to show the rates of delivery of slurry and aggregate, and resettable totalizers so that the total amounts of slurry and aggregate introduced into the mixer can be determined. Rate-of-flow indicators and totalizers for like materials shall be accurate to within 0.5-percent when compared directly. The slurry totalizer shall not register when the slurry metering system is not delivering material to the mixer.

A monitoring device shall be located either in the stream of aggregate feed or where the device will monitor movement of the belt by detecting revolutions of the tail pulley on the belt feeder. The device for monitoring no flow or belt movement, as the case may be, shall stop the slurry and aggregate proportioning automatically and immediately when there is no flow.

MIXING AND STORAGE

The lime slurry shall be stored in a central mixing tank provided with an agitator that both mixes and keeps the lime in suspension until applied to the aggregate. Agitation shall be continuous while the slurry is in storage and the storage time shall not exceed 24 hours. Agitation shall be such that a build-up of consolidated lime on the bottom or sides of the storage tank is prevented. The storage tank for slurry shall be equipped with a float-type device for automatic and immediate cut-off of the proportioning of slurry and aggregate when the level of slurry is lowered sufficiently to expose the pump suction line.

The rate of feed to the continuous mixer used for production of the lime treated aggregate shall not exceed the rate of feed that will permit complete mixing of all the material. Dead areas in the mixer, in which the material does not move or is not sufficiently agitated, shall be corrected by a reduction in the volume of material or by other adjustments. The mixer shall be equipped with paddles of a type and arrangement that provides sufficient mixing action and movement to the mixture. The mixer shall produce a homogeneous mixture of thoroughly and uniformly coated aggregates at discharge from the mixer.

After the slurry has been added to the aggregate, the lime treated aggregate shall be placed in stockpiles and cured for not less than 24 hours but not more than 24 days before being incorporated into the asphalt concrete. Lime treated aggregate stored in excess of 24 days shall not be used in the work.

PRODUCTION DATA COLLECTION

The device that controls the proportioning of slurry to aggregate shall produce a log of production data. The log of production data shall consist of a series of sets of data captured at 10-minute intervals throughout the period of daily production. Each set of production data shall be a register of production activity at that time and not a summation of the data over the preceding 10 minutes. The amount of material represented by each set of data shall be that amount produced for the period of time from 5 minutes before and 5 minutes after the capture time. Collected data shall be held in storage by the plant control device for the duration of the contract. The daily log shall be submitted to the Engineer, in electronic and printed media, at the end of each production shift, or as requested by the Engineer, and shall include the following:

- A. Date of production.
- B. Time of day the data is captured.
- C. Aggregate size being treated.
- D. Rate of flow of the wet aggregate, collected directly from the aggregate weigh belt.
- E. Moisture content of the aggregate about to be treated, expressed as a percent of the dry aggregate.
- F. Rate of flow of the dry aggregate calculated from the wet aggregate flow rate.
- G. Rate of flow of the lime slurry measured by the slurry meter.

- H. Rate of flow of dry lime, calculated from the slurry meter output.
- I. Agreed lime ratio for the individual aggregate size being treated.
- J. Actual lime ratio calculated from the aggregate weigh belt and the slurry meter output, expressed as a percent of the dry aggregate.
- K. Calculated difference between the agreed lime ratio and the actual lime ratio.
- L. Portions of dry lime and water as proportioned at the time of the slurry production.

Electronic media containing recorded production data shall be presented in a tab delimited format on a 90-mm diskette with a capacity of at least 1.44 megabytes. Each set of continuous production data shall be LFCR (line feed carriage return, one line, separate record) with allowances for sufficient fields to satisfy the amount of data required by these specifications. The reported data shall be in the above order and shall include data titles at least once per report.

CONTRACTOR QUALITY CONTROL

The Contractor shall control the lime treatment operation. Should it become evident that the Contractor does not have control of the process, lime treatment of aggregates for the contract shall cease until such time as the problem is identified and corrected. Evidence that the Contractor is not controlling the production shall include, but not be limited to, the following:

- A. Data has not been submitted to the Engineer.
- B. Collected data has not been complete, timely, or in the correct format.
- C. The Contractor has not taken corrective actions when necessary.
- D. Corrective actions taken have not been successful or timely.
- E. Plant production has not been stopped when proportioning tolerances have been exceeded.
- F. Any of the devices used for the production of lime treated aggregates has failed to function during production.

The Contractor shall determine the moisture content of the aggregate at least once during each 2 hours of production and shall adjust the slurry to aggregate proportioning accordingly. Aggregate moisture content determinations shall be representative of the amount of moisture in the aggregate being treated. Moisture content shall be calculated in conformance with California Test 226 or 370 and as a percent of the dry mass of the aggregate. The Engineer will use the same California Test for the verification of moisture content.

The following actions shall be taken by the Contractor:

- A. When 3 consecutive sets of recorded production data indicates deviation greater than 0.2-percent above or below the agreed lime ratio, production of lime treated aggregates shall cease.
- B. When a set of recorded production data indicates a deviation of greater than 0.4-percent above or below the agreed lime ratio, production of lime treated aggregates shall cease and the material represented by that set of data shall not be used for the manufacture of asphalt concrete.
- C. When 20 percent or more of the total daily production indicates deviation of greater than 0.2-percent above or below the agreed lime ratio, production shall cease and the total day's production shall not be used for the manufacture of asphalt concrete.

When production is stopped for failure to conform to these special provisions, the Contractor shall implement corrective measures, shall notify the Engineer before proceeding, and shall conduct a successful 15-minute test run prior to resuming production.

PAYMENT

Full compensation for lime treated aggregates for use in the manufacture of Type A asphalt concrete, open graded asphalt concrete, shall be considered as included in the contract price paid per tonne for asphalt concrete of the type or types involved and no separate payment will be made therefor.

ENGINEER'S ESTIMATE
05-0G8704

Item	Item Code	Item	Unit of Measure	Estimated Quantity	Unit Price	Item Total
1	071325	TEMPORARY FENCE (TYPE ESA)	M	130		
2	074017	PREPARE WATER POLLUTION CONTROL PROGRAM	LS	LUMP SUM	LUMP SUM	
3	074020	WATER POLLUTION CONTROL	LS	LUMP SUM	LUMP SUM	
4 (S)	120090	CONSTRUCTION AREA SIGNS	LS	LUMP SUM	LUMP SUM	
5 (S)	120100	TRAFFIC CONTROL SYSTEM	LS	LUMP SUM	LUMP SUM	
6 (S)	128650	PORTABLE CHANGEABLE MESSAGE SIGN	LS	LUMP SUM	LUMP SUM	
7 (S)	150662	REMOVE METAL BEAM GUARD RAILING	M	100		
8 (S)	150714	REMOVE THERMOPLASTIC TRAFFIC STRIPE	M	2500		
9 (S)	150715	REMOVE THERMOPLASTIC PAVEMENT MARKING	M2	120		
10 (S)	151572	RECONSTRUCT METAL BEAM GUARD RAILING	M	930		
11 (S)	153152	COLD PLANE ASPHALT CONCRETE PAVEMENT (30 MM MAXIMUM)	M2	4500		
12 (S)	153153	COLD PLANE ASPHALT CONCRETE PAVEMENT (45 MM MAXIMUM)	M2	150 000		
13 (S)	156590	REMOVE CRASH CUSHION (SAND FILLED)	EA	2		
14	198007	IMPORTED MATERIAL (SHOULDER BACKING)	M3	2200		
15	374002	ASPHALTIC EMULSION (FOG SEAL COAT)	TONN	16		
16	390155	ASPHALT CONCRETE (TYPE A)	TONN	36 000		
17	390165	ASPHALT CONCRETE (OPEN GRADED)	TONN	7500		
18	394002	PLACE ASPHALT CONCRETE (MISCELLANEOUS AREA)	M2	150		
19	397001	ASPHALTIC EMULSION (PAINT BINDER)	TONN	240		
20 (S)	832001	METAL BEAM GUARD RAILING	M	110		